AMENDMENT(S) TO THE CLAIMS

1. (Original) A sprinkler, comprising:

a riser for receiving a pressurized fluid;

a nozzle;

means for mounting the nozzle at an upper end of the riser for rotation about an axis;

a turbine mounted for rotation inside the riser;

drive means for connecting the turbine to the nozzle so that rotation of the turbine by the pressurized fluid will rotate the nozzle; and

means for preventing over-spinning of the turbine when the pressurized fluid is air or a mixture of water and air.

2. (Original) The sprinkler of Claim 1 wherein the over-spinning prevention means includes a brake for selectively engaging the turbine.

3. (Original) The sprinkler of Claim 1 wherein the over-spinning prevention means includes a valve for selectively re-directing the fluid around the turbine.

4. (Original) The sprinkler of Claim 2 wherein the brake includes at least one float that moves upwardly when the pressurized fluid entering the lower end of the riser is substantially entirely water and disengages a stop member from the turbine.

5. (Original) The sprinkler of Claim 3 wherein the valve includes at least one float that moves upwardly when the pressurized fluid entering the lower end of the riser is substantially entirely water and covers at least one inlet orifice.

6. (Original) The sprinkler of Claim 3 wherein the valve includes a spring biased valve member that moves upwardly when the pressurized fluid entering the lower end of the riser is substantially entirely water and covers at least one inlet orifice.

7. (Original) The sprinkler of Claim 2 wherein the brake includes a float that moves upwardly when the pressurized fluid entering the lower end of the riser is substantially entirely water to disengage a stop member from the turbine.

8. (Original) The sprinkler of Claim 1 wherein the over-spinning prevention means applies a brake force to the turbine.

9. (Original) The sprinkler of Claim 1 wherein the over-spinning prevention means re-directs a mixture of water and air around the turbine.

10. (Original) The sprinkler of Claim 2 wherein the brake includes a single cylindrical hollow float that moves upwardly inside a cylindrical guide sleeve when the pressurized fluid entering the lower end of the riser is substantially entirely water and disengages a stop member from the turbine.

11. (Original) A sprinkler, comprising:

a riser for receiving a pressurized fluid;

a nozzle mounted at an upper end of the riser for rotation about an axis;

a turbine mounted for rotation inside the riser;

a drive mechanism connecting the turbine to the nozzle so that rotation of the turbine by the pressurized fluid will rotate the nozzle; and

a brake configured and mounted within the riser to selectively engage the turbine to prevent over-spinning of the turbine when the pressurized fluid is air or a mixture of water and air.

12. (Original) The sprinkler of Claim 11 wherein the brake includes at least one float that moves upwardly when the pressurized fluid entering the lower end of the riser is substantially entirely water and disengages a stop member from the turbine.

13. (Original) The sprinkler of Claim 11 wherein the brake includes a cylindrical hollow float that moves upwardly when the pressurized fluid entering the lower end of the riser is substantially entirely water to disengage a stop member from the turbine.

14. (Previously Amended) The sprinkler of Claim 1 wherein the brake locks the turbine against rotation.

15. (Original) The sprinkler of Claim 11 wherein the brake includes a single cylindrical hollow float that moves upwardly inside a cylindrical guide sleeve when the pressurized fluid entering the lower end of the riser is substantially entirely water and disengages a stop member from the turbine.

16. (Canceled)

17. (Previously Amended) The sprinkler of Claim 18 wherein the valve includes at least one float that moves upwardly when the pressurized fluid entering the lower end of the riser is substantially entirely water and covers at least one inlet orifice.

18. (Previously Amended) A sprinkler, comprising:

a riser for receiving a pressurized fluid;

a nozzle mounted at an upper end of the riser for rotation about an axis;

a turbine mounted for rotation inside the riser;

a drive mechanism connecting the turbine to the nozzle so that rotation of the turbine by the pressurized fluid will rotate the nozzle; and

a valve configured and mounted in the riser to selectively re-direct the fluid around the turbine if the fluid is air or a mixture of water and air, wherein the valve includes a spring biased valve member that moves upwardly when the pressurized fluid entering the lower end of the riser is substantially entirely water and covers at least one inlet orifice.

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~~19.~~ (Previously Amended) The sprinkler of Claim ~~18~~ wherein the valve includes a cylindrical float that moves upwardly when the fluid entering the riser is substantially entirely water.

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~~20.~~ (Previously Amended) The sprinkler of Claim ~~18~~ wherein the spring biased valve member is generally funnel shaped.

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~~21.~~ (Currently Amended) A method of winterizing a landscape irrigation sprinkler system, comprising the steps of:

pressurizing at least one supply line connected to a plurality of sprinklers with a compressible fluid to remove the water therefrom to thereby avoid breakages that would otherwise result from freezing and expansion of the water in the Winter;

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detecting in the sprinklers whether the pressurized compressible fluid or a mixture of the pressurized compressible fluid and water is entering the sprinklers; and

preventing over-spinning of a turbine connected to a gear train reduction in each of the sprinklers upon detection of the entry into the sprinklers of the pressurized compressible fluid or the mixture of the pressurized compressible fluid and water;

whereby damage to the bearings, drive shaft, turbine, gear train reduction and/or related nozzle drive components of the sprinklers is avoided.

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~~22.~~ (Previously Added) The method of Claim ~~21~~ wherein the step of preventing over-spinning is accomplished by applying a braking force to the turbine.

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~~23.~~ (Previously Added) The method of Claim ~~21~~ wherein the braking force is applied by a float.

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~~24.~~ (Previously Added) The method of Claim ~~22~~ wherein the braking force locks the turbine against rotation.

25. (Currently Amended) The method of Claim ~~22~~ 21 wherein the braking force is a drag force applied against a component of the rotor type sprinkler selected from the group consisting of the turbine, [a] the gear train reduction, a nozzle and a head.

26. (Previously Added) The method of Claim ~~21~~ wherein the step of preventing over-spinning is accomplished by re-directing the pressurized compressible fluid or the mixture of the pressurized compressible fluid and water around the turbine.

27. (Previously Added) The method of Claim ~~26~~ wherein the redirecting is performed by a valve.

28. (Previously Added) The method of Claim ~~21~~ wherein the pressurized compressible fluid is air.

29. (Previously Added) The method of Claim ~~21~~ wherein the supply line is fed with the pressurized compressible fluid for between about two hours and eight hours.

30. (Currently Amended) The method of Claim ~~21~~ and further comprising re-filling the supply line and sprinklers with pressurized water in the Spring and during such refilling:

detecting in the sprinklers whether the compressible fluid or a mixture of the compressible fluid and pressurized water is entering the sprinklers; and

preventing over-spinning of [a] the turbine in each of the sprinklers upon detection of the entry into the sprinklers of the compressible fluid or the mixture of the compressible fluid and pressurized water.

31. (Previously Added) A sprinkler comprising:

a riser having a fluid inlet connectable to a source of water for normal operation, and to a source of compressed air to blow water out of the sprinkler to prevent freezing during cold weather;

a turbine mounted in the riser which is driven by the incoming fluid; and

a speed control mechanism mounted in the riser and including a valve that limits the rotational speed of the turbine when the incoming fluid is compressed air, but has substantially no effect on the rotational speed when the incoming fluid is water.

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32. (Previously Added) A sprinkler comprising:

a housing having a fluid inlet connectable to a source of water for normal operation, and to a source of compressed air to blow water out of the sprinkler to prevent freezing during cold weather;

a turbine mounted in the housing and having a rotor which is driven by the incoming fluid and a flow directing stator; and

a speed control mechanism mounted in the housing that limits the rotational speed of the turbine when the incoming fluid is compressed air, but has substantially no effect on the rotational speed when the incoming fluid is water.

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33. (Previously Added) A rotor type sprinkler, comprising:

an outer housing having an inlet at a lower end of the housing for connection to a source of pressurized water;

a riser mounted within the outer housing for telescopic movement from an extended position to a retracted position;

a turbine mounted within the riser;

a head rotatably mounted at the upper end of the riser and including a nozzle for ejecting a stream of water over an area to be irrigated;

a drive mechanism connecting the turbine to the head for rotating the head; and

an over-spin mechanism mounted in the riser and operatively associated with the turbine to prevent over-spinning of the turbine when compressed air is fed to the inlet of the outer housing during winterizing but otherwise permitting the turbine to spin in a normal range of rotational speed during normal operation of the sprinkler when substantially entirely water is fed to the inlet of the housing at a pressure within a nominal water pressure range.

34. (Previously Added) The sprinkler of Claim 33 wherein the over-spin mechanism includes a valve.

35. (Previously Added) The sprinkler of Claim 34 wherein the over-spin mechanism includes a brake.

36. (Previously Added) An arc-adjustable pop-up rotor type sprinkler, comprising:

an outer housing having an inlet at a lower end of the housing for connection to a source of pressurized water;

a riser mounted within the outer housing for telescopic movement from an extended position to a retracted position;

a turbine mounted within the riser;

a head rotatably mounted at the upper end of the riser and including a nozzle for ejecting a stream of water over an area to be irrigated;

a gear train reduction connecting the turbine to the head for rotating the head;

a reversing mechanism and an arc adjustment mechanism mounted in the riser and operatively associated with the head and the gear train reduction for causing the head to rotate between two predetermined arc limits so that the stream of water is ejected over a sector of the area to be irrigated of a predetermined size; and

an over-spin mechanism mounted in the riser and operatively associated with the turbine to prevent over-spinning of the turbine when compressed air is fed to the inlet of the outer housing during winterizing but otherwise permitting the turbine to spin in a normal range of rotational speed during normal operation of the sprinkler when substantially entirely water is fed to the inlet of the housing at a pressure within a nominal water pressure range.

37. (Previously Added) The sprinkler of Claim 36 wherein the over-spin mechanism includes a by-pass valve.

38. (Previously Added) The sprinkler of Claim 36 wherein the valve includes a coil spring.

39. (Previously Added) The sprinkler of Claim 36 wherein the over-spin mechanism includes a brake.

40. (Previously Added) The sprinkler of Claim 36 wherein the brake applies a drag force against a component of the sprinkler selected from the group consisting of the turbine, the gear train reduction, the nozzle and the head.